

LABORATORY MANUAL OF MICROBIOLOGY

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The present book embodies 15 chapters viz. Preparation of different liquid and solid media, Isolation Techniques for soil, air, water and seed borne microbes, Micrometry, Microbial Growth, Ames Test, Assay of Antibiotics, Antibiotics Sensitivity test, Bacterial Transformation, Imvic Test, growth curve of coliphage, Culture techniques from body fluids, Acid and Alcoholic Fermentation and each of which includes protocol of several microbiological practicals prescribed in the syllabi of Graduate and Post Graduate courses of Microbiology, Biochemistry and Biotechnology. Besides these, the book also contains the methods of qualitative and quantitative analysis of air, soil and water borne pathogenic and non-pathogenic microbes and agriculturally important microbes. Authors have prepared this MS with a view to provide laboratory techniques to all categories of UG and PG students to carryout laboratory assignments prescribed in their syllabi. For the convenience and better understanding, most of the methods have been described with help of Flow Chart and Sketches. Authors are confident that the present book will certainly be very useful to learn and handle different type of microbiological experiments in the laboratory.

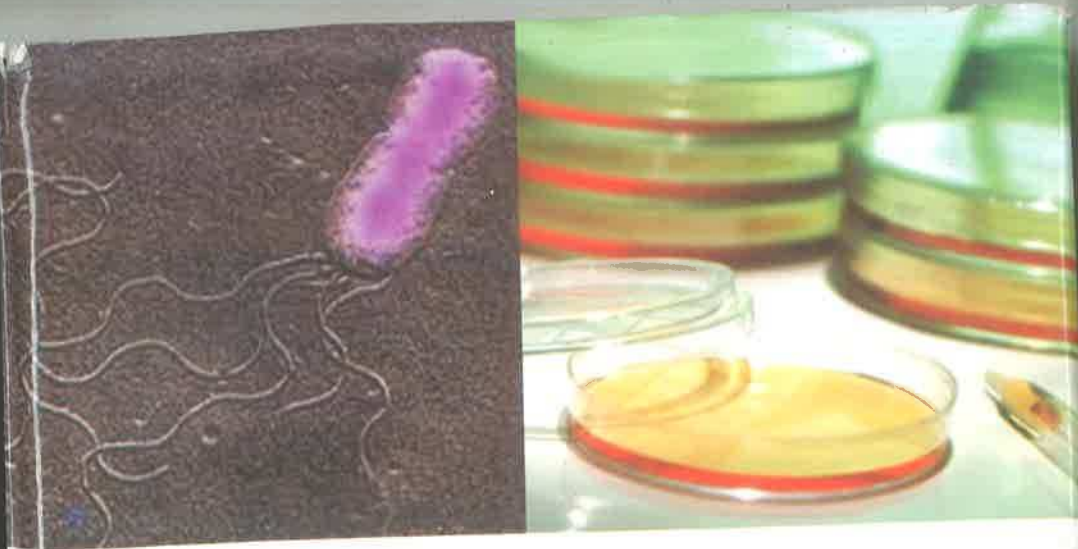
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Contents

Chapter-1	
Organisation of Microbiology Laboratory	1
1.1 Aseptic Techniques and Laboratory Rules	1
1.2 Basic Requirement of Microbiology Laboratory	2
1.3 Cleaning of Glass Wares	7
1.4 Plugging and Sterilization	13
1.5 Personal Hygiene	19
Chapter-2	
Preparation of Media-Liquid and Solid for Growth of Microorganisms	21
2.1 Preparation of Liquid Medium (Broth)	24
2.2 Preparation of Solid Medium	25
2.3 Preparation of Agar Slants and Plates	29
Chapter-3	
Isolation Techniques and Maintenance of Microorganisms	33
3.1 Isolation	34
(a) By micromanipulator	34
(b) By exposure to air	34

(c) By streak plate technique	35
(d) By spread plate technique	36
(e) By pour plate technique	38
(f) By serial dilution technique	39
3.2 Culture Maintenance and Preservation	41
(a) Lyophilization or freeze drying	41
(b) Storage of strain at -70°C	43
(c) Storage in liquid nitrogen	43
(d) Storage on glass beads at -60°C to -70°C	44
(e) Storage in gelatin disc	45
(f) Storage by sub culturing	46
(g) Storage in mineral oil	46

Chapter-4

Isolation of Pure Cultures from Soil, Air, Water and Seed Surface	47
4.1 From Soil	47
(a) Isolation of fungi	48
(b) Isolation of bacteria	49
(c) Isolation of VAM (Vesicular Arbuscular Mycorrhiza) spores	50
(d) Isolation of actinomycetes from soil	56
(e) Isolation of rhizosphere microorganisms	58
(f) Isolation of azotobacter from garden soil	59
(g) Isolation of rhizobium from soil/root nodules	60
(h) Isolation of cyanobacteria from soil	62
4.2 From Air	63
(a) Isolation of fungi and bacteria from phylloplane	63
4.3 From Water	65
(a) Isolation of aquatic fungi	65

4.4 Isolation of Seed Mycoflora	66
(a) Standard agar plate method	66
(b) Blotter method	67
4.5 Isolation of Industrially Important Microbes	68

Chapter-5

Staining and Microscopic Examination of Microbes	69
5.1 Staining of Fungi	71
5.2 Staining of Vesicular-Arbuscular Mycorrhizal (VAM) fungi	72
5.3 Staining of Bacteria	73
5.3.1 Simple Staining of Bacteria	76
5.3.2 Differential Staining of Bacteria	76
a) Gram staining method	76
b) Hucker staining method	78
c) Burke staining method	78
5.3.3 Negative Staining of Bacteria	79
5.3.4 Acid-Fast Staining of Mycobacterium	80
5.4 Endospore Staining	83
a) Popping test for endospore staining	83
b) Negative staining of endospore	83
c) Dorner-staining method for bacterial endospores	84
d) Schaeffer-fulton staining method of endospores	85
5.5 Staining of Capsules/Slime	85
5.6 Staining of Flagella	86
5.7 Staining of Cytoplasmic Inclusions	88
a) Staining of poly-β-hydroxybutyrate (PHB) granules	88
b) Staining of metaphosphatic or metachromatic granules	89

Chapter-6	
Micrometry and Measurement of Spores	91
6.1 Calibration and Standardization of Microscope Using Ocular Micrometer and Stage Micrometer	92
6.2 Measurement of Size of given Microorganism (Bacteria)	94
Chapter-7	
Microbial Growth	95
7.1 Determination of Growth Curve of Bacteria	96
a) Measurement of Growth Curve of <i>Escherichia coli</i>	97
b) Measurement of growth curve of <i>Pseudomonas</i>	98
7.2 Determination of Bacterial Population Count	99
7.3 Effect of Temperature on Bacterial Growth	100
7.4 Effect of pH on Bacterial Growth (<i>E.coli</i>) ..	102
7.5 Effect of Different Chemicals on Bacterial Growth	102
Chapter-8	
Study of Mutations by Ames Test	105
8.1 Spot Method	107
8.2 Plate Incorporation Test	109
Chapter-9	
Assay of Antibiotics, Antibiotics Sensitivity of Microbes and Demonstration of Antibiotic Resistance	111
9.1 Assay of Antibiotics	111
9.2 Determination of antimicrobial spectrum of isolates	113
9.3 Antibiotics Sensitivity Test	114
9.4 Demonstration of Antibiotic Resistance	115

Chapter-10	
Bacterial Transformation	121
10.1 Transformation of <i>E. coli</i> by Electroporation	121
10.2 Preparation and Transformation of Competent <i>E.coli</i> Using Calcium Chloride	126
Chapter-11	
Biochemical Characterization of Enteric Bacteria (IMViC Test)	133
11.1 Gas and Acid production Test	134
11.2 Urease test → to detect <i>Proteus</i>	135
11.3 TSI (Triple Sugar- Iron) test → gram (-ive) intestinal <i>Bacilli</i>	136
11.4 Gelatin Test	138
11.5 IMViC Test	139
11.5.1 Indole Production Test	140
11.5.2&3 Methyl red and Voges Proskauer (VP) Test	142
11.5.4 Citrate Utilization Test	146
Chapter-12	
Isolation and One Step Growth Curve of Coliphage	149
12.1 Isolation of Bacteriophage from Sewage .	150
12.2 Determination of One-step Growth Curve of Bacteriophage	152
Chapter-13	
Testing of Water Quality (Bacteriological Examination of Water)	155
13.1 The Presumptive Test	156
13.2 The Confirmed Test	158
13.3 The Completed Test	161

Chapter-14

**Culture from Body Fluids
(Urine, Stool, Blood) 163**

14.1 Culture from urine	163
14.1.1 Estimation of urine bacteria by calibrated loop-direct streak method	164
14.1.2 Estimation of urine bacteria by pour-plate (dilution) method	166
14.1.3 Examination of bacteri-uria by using urine dip-slide method	167
14.2 Culture from stool	168
14.2.1 Primary isolation of enteric pathogens- <i>salmonella</i> and <i>shigella</i>	170
14.2.2 Preliminary identification of enteric pathogens, using triple sugar iron agar (TSIA) medium	171
14.3 Culture from blood	176
14.3.1 Culture by commercially available BBL™ septi chek system	177

Chapter-15

Mixed Acid and Alcoholic Fermentation 181

15.1 Fermentation Pathways	182
15.2 Mixed Acid Fermentation	182
15.3 Alcohol Fermentation from Sugar	183
15.4 Acetic Acid (Vinegar) Production by Fermentation	184
15.5 Alcohol Fermentation from Grape Juice ...	187

Appendices

1. Microbiological Culture Media	191
2. Microbiological Indicators, Reagents & Stains	196

Chapter **1**

**Organisation of
Microbiology Laboratory**

Microbiology is a branch of science dealing with the study of organisms which are too small to be seen clearly by unaided eye. Roughly the organisms with a diameter of 0.1mm or less, which can not be seen by the human eyes unaided, come under the domain of microorganisms.

Thus, the laboratory work dealing with the microorganisms needs special care to avoid infection and infusion for maintaining good health. In fact all microorganisms should be treated as potential pathogens. Thus, for working with microorganisms aseptic techniques must be followed by students as well as by the laboratory assistants and teachers.

1.1 Aseptic Techniques and Laboratory Rules

1. Always wear an apron before entering the microbiology laboratory to protect microbial contamination and laboratory hazards. Wear a paper cap or tie back hair to minimize its exposure to open flames.